Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

1-82. (Canceled)

83. (Currently Amended) A method ~~Method~~ for electronically controlled enzymatic reaction at an addressable location, comprising the steps of:

providing ~~an electronically addressable~~ a location comprising a permeation layer coupled to an electrode;

contacting a target ~~substrate~~ with said location;

placing said location at an opposite charge to said target ~~substrate~~, thereby concentrating said target ~~substrate~~ on said location;

attaching said target ~~substrate~~ to said location;

contacting an enzyme with said location; and

allowing said enzyme to react with said target ~~substrate~~ on said location.

84. (Currently Amended) The method of claim 83, wherein said target ~~substrate~~ comprises nucleic acid.

85. (Previously Presented) The method of claim 83, wherein said enzyme comprises a restriction enzyme, a ligase, a proteinase, a glycosidase, a DNA polymerase, a RNA polymerase, or a phosphorylase.

86. (Previously Presented) The method of claim 83, wherein said enzyme comprises a DNA polymerase.

87. (Previously Presented) The method of claim 83, wherein said enzyme comprises an RNA polymerase.

88. (Previously Presented) The method of claim 83, wherein said enzymatic reaction comprises an enzymatic digestion of a nucleic acid.

89. (Previously Presented) The method of claim 83, wherein said enzymatic reaction comprises synthesis of a nucleic acid.

90. (Previously Presented) The method of claim 83, wherein said enzymatic reaction comprises synthesis of a polypeptide.

91. (Currently Amended) A method ~~Method~~ for electronically controlled amplification of nucleic acid, comprising the steps of:

(1) providing ~~an electronically addressable~~ a location comprising a permeation layer coupled to an electrode;

(2) providing an oligonucleotide primer Y attached to said location;

(3) contacting a single stranded nucleic acid X with said location, wherein said primer Y specifically hybridizes to said nucleic acid X;

(4) placing said location at an opposite charge to said nucleic acid X, thereby concentrating said nucleic acid X on said location and hybridizing said nucleic acid X to said primer Y;

(5) contacting a nucleic acid polymerase with said location;

(6) placing said location at an opposite charge to said polymerase, thereby concentrating said polymerase on said location and allowing said polymerase to synthesize a nucleic acid Y from said primer Y on said location;

(7) placing said location at a negative potential for a sufficient time to remove said nucleic acid X from said location;

(8) contacting an oligonucleotide primer X with said location, wherein said primer X specifically hybridizes to said nucleic acid Y;

(9) placing said location at an opposite charge to said primer X, thereby concentrating said primer X on said location and hybridizing said primer X to said nucleic acid Y; and

(10) placing said location at an opposite charge to said polymerase, thereby concentrating said polymerase on said location and allowing said polymerase to synthesize a nucleic acid from said primer X on said location.

92-94. (Canceled)

95. (Previously Presented) The method for electronically controlled enzymatic reaction of claim 83 further including the step of placing said location at an opposite charge to said enzyme, thereby concentrating said enzyme on said location.

96. (Currently Amended) The method for electronically controlled enzymatic reaction of claim 83 wherein the target ~~substrate~~ is a target molecule.

97. (Currently Amended) The method for electronically controlled enzymatic reaction of claim 83 further including the step, after the second contacting step, of placing said location at a similar charge to said target ~~substrate~~.

98. (Currently Amended) The method for electronically controlled enzymatic reaction of claim 97 wherein placing said location at a similar charge to said target ~~substrate~~ serves to remove at least some of said target ~~substrate~~ from said addressable location.

99. (Currently Amended) The method for electronically controlled enzymatic reaction of claim 83 wherein the addressable location includes a first sequence that is complementary to a first portion of the target ~~substrate~~, further comprising the steps of:

contacting a second sequence, the second sequence being complementary to a second portion of the target ~~substrate~~, with the target ~~substrate~~ at said location, the second sequence being capable of being ligated with the first sequence,

enzymatically ligating the first sequence with the second sequence, and

placing said location at similar charge to said target ~~substrate~~ to remove said target ~~substrate~~ from the ligated first sequence and second sequence.

100. (Previously Presented) The method for electronically controlled enzymatic reaction of claim 99 wherein the steps are repeated for amplification.

101. (Currently Amended) The method for electronically controlled enzymatic reaction of claim 100 wherein the amplification is of the target ~~substrate~~.

102. (Canceled) ~~The method for electronically controlled enzymatic reaction of claim 99 wherein the substrate is a target.~~

103. (Canceled) ~~The method for electronically controlled enzymatic reaction of claim 102 wherein the method constitutes an electronic ligation chain reaction procedure.~~

104. (Previously Presented) The method for electronically controlled enzymatic reaction of claim 99 further including the step of placing said location at an opposite charge to said enzyme, thereby concentrating said enzyme on said location.

105. (Currently Amended) The method for electronically controlled enzymatic reaction of claim 104 wherein the steps are repeated for amplification of the target ~~substrate~~.

106. (Canceled) ~~The method for electronically controlled enzymatic reaction of claim 105 wherein the substrate is a target.~~

107. (Previously Presented) The method for electronically controlled enzymatic reaction of claim 99 wherein the second sequence is labeled.